# **Schedule A**

# **PRIMARY HEALTH CARE COSTING IN INDIA**

## Background

A strong, responsive, and sustainable primary health care (PHC) system is essential for achieving universal health coverage (UHC) under which all people have access to good quality health services without suffering financial hardship. However, for many, PHC services are unavailable, inaccessible, or unaffordable in the absence of sufficient resources. In low-income countries especially, the need for increasing resources for PHC is greatest where it estimated that PHC spending per capita needs to increase from $25 to $65 while health workforces need to increase from 5·6 workers per 1000 population to 6·7 per 1000 population, delivering an average of 5·9 outpatient visits per capita per year.(1)

To ensure the provision of high quality PHC services, there is a need to understand the costs and resource requirements for PHC and use this evidence to allocate sufficient financial resources. The study will estimate the actual and normative cost of PHC service provision as well as the financing and resource gaps. The results of the analysis will be used to generate much-needed evidence to support decision-making on PHC planning, resource allocation and budgeting, and helping to improve PHC system performance. The tool for the health system costing, which will be available as a public good, will be provided to local stakeholders which can then adapt it to local needs to calculate historical and projected cost of PHC service delivery.

### **Primary Health Care in India**

In 2018, the Government of India launched Ayushman Bharat, a two-pronged strategy for increasing access to quality healthcare and achieving UHC.(2) The first component is Ayushman Bharat Pradhan Mantri-Jan Arogya Yojana (AB PM-JAY), a national health insurance scheme aimed at providing coverage for secondary and tertiary care to the most vulnerable and poor population in the country. The second component of the strategy aims to provide free, comprehensive, and quality PHC services through an upgrade of its existing public sector PHC network to Ayushman Bharat Health & Wellness Centres (AB HWCs).(2)

The upgraded health centres will be transformed to Health and Wellness Centres (HWC) which will provide a comprehensive primary health care (CPHC) service package. Through the HWC strategy, 150,000 Sub Health Centres (SHC), Primary Health Centres (PHC), and Urban Primary Health Centres (UPHC) will be upgraded to HWC by 2022. As per the Ayushman Bharat HWC website, 56,533 HWC have been transformed to date.(3) Despite this initiative, there is considerable variation in the quality of the public PHC infrastructure across India and not all CHCs, PHCs, or SHCs are fully functional or staffed. According to 75th round of National Sample Survey (NSS) an estimated 70% of the population continues to seek out patient (OP) care in the private sector.(4)

The objective of the assignment is to conduct PHC costing study aimed at producing an analysis of Primary Health Centres (PHC) network costs, develop an actual and normative cost model using the tool, and facilitate the further use of tool and results. The study will estimate the actual and normative costs of the public sector package of CPHC services as defined by the government, which is likely be the Health & Wellness Centres (HWCs) package provided across formal service networks comprising Community Health Centres (CHC), Primary Health Centres (PHC), and Sub-Centre Health Centres (SHC) levels.

## **Methodology**

### **Sampling**

From each of the three selected states (Bihar, Punjab & Tamil Nadu) four health blocks will be selected. The primary care provision at the district level is divided under each health blocks. As depicted in Figure 1, at the apex level, there is one block Medical officer, who will also be the Medical Officer in charge of the Community Health Centre. The PHC’s are under this block CHC and they will also have Health Sub Centres under each PHC. All these institutions are responsible for providing primary health care services to the population.

**Figure 1. Structure of the PHC organization at the block level**

Chart, funnel chart

Description automatically generated

The criteria for selection of blocks will be those having HWC’s (both PHC and SC) which are functional for more than one year. i.e., those PHC’s and SC’s which were transformed into HWC’s during 2018-19. This is to ensure the availability of data for one complete year of HWC’s. In each health block, 7 facilities, 1 CHC, 2 PHC’s (1 Rural and 1 Urban) and 2 HSC’s) each under the Rural and Urban PHC’s (i.e., total 4 HSCs) will be randomly selected as part of the sample.(Figure 2) Thus, a total of 132 public health facilities across the country i.e. 12 CHCs, 24 PHCs and 96 sub-centres will be selected from three different states in India.

**Figure 2: Sample selection from one Health Block**

Diagram

Description automatically generated

However, the transformation process of HWC’s is not done in a systematic way, but on a random basis. Hence, the selection process will be purposive in nature after due consultation with the state and district health authorities. Also, the proximity of study blocks from the State capital and District Hospitals will be considered during sample selection.

### Data Collection

Health system cost will be assessed following the concept of economic costing and bottom-up approach. Under this approach, the first step involves identification and classification of cost centres in terms of those directly involved in the treatment process (Out-patient clinic, operation theatre, in-patient ward, etc.) and those acting as supportive or indirect cost centres (Laboratory, pharmacy, dietetics, laundry, etc.). After identification of respective cost centres, data on the quantity of various inputs i.e., both capital and recurrent resources spent on the delivery of service output will be collected for the reference year of the health system costing.

Facility maps will be obtained from the Engineering department of the institute and will be reviewed for assessing the dimensions of the space and building (in square feet). Further, the non-consumable stock register will be reviewed for assessing the quantity of various medical/non-medical equipment and furniture items available in the department. Similarly, recurrent resources in the form of drugs and consumables, surgical supplies and other sanitary/stationary items will be estimated by reviewing the consumable stock registers, indents/vouchers and pharmacy records. Data on the salaries (inclusive of all the annual incentives) received by each of the staff members, both partly or completely involved in the treatment process, will be assessed from the payslips available from the accounts department of the institute. Patient files will be assessed for details on the number of various diagnostic tests prescribed to the patients. Following identification of inputs, data on the service output produced by each of the cost centres (in the form of the number of out-patient consultations, in-patient admissions, surgeries, radiotherapy sessions, etc.) will be assessed from the routine medical records of the respective department.

The next step involves assigning a monetary value to each of the inputs. For estimating space costs, the current market rental price of a similar space will be used, based on the interview with the key informants. The actual procurement prices will be obtained from the procurement department and central store of the study hospital, and will be used for pricing medical equipment, drugs and consumables (surgical, stationary and sanitary).

In case of non-availability of procurement price data on any of the above-mentioned items, and particularly for furniture items, market prices will be used. The expenses incurred on overheads like water, maintenance, laundry and dietetics will be obtained from the respective departments of the institute. In addition, the annual expenditure incurred on electricity will be based on an actual measurement of the total electricity load in kilowatt-hour (in each of the specific rooms of the department) by the electrical engineers.

Time allocation interviews will be conducted with both the medical and the technical staff for assessing their time spent on the different activities related to the treatment of cholelithiasis. Specifically, medical staff members will be asked for their time spent on activities done on regular basis (outpatient consultation, inpatient care, operation theatre, etc.) and fixed interval (meetings, teaching/training, etc.) i.e., weekly, monthly, annually, etc. Similarly, technical staff specifically related to the treatment will be interviewed for their time spent on planning activities, quality assurance and delivery of services. Alongside these interviews, observation-based data will also be collected for per patient time spent on the procedures.

The average life of the equipment will be determined based on the interview with the staff members involved in using these equipment.

### **Data Analysis**

Capital expenditure will be annualized to arrive at the equivalent annual cost taking into consideration the discount rate (time preference for money and inflation) and the lifespan of the capital equipment. A discount rate of 3% will be used based on the recommended guidelines. Space cost will be calculated by multiplying the estimates of floor size of the facility with the local commercial rental price of the similar space. The total cost of the recurrent resources (drugs and consumables) will be estimated by multiplying the unit price with the quantity of respective resource consumed. The resources (both capital and recurrent) which are shared in nature and are used in multiple activities, will be apportioned towards each of the respective activity using appropriate apportioning statistics as shown in table 1. For example, the staff members (consultants, junior/senior residents) which are jointly involved in a number of activities (outpatient consultation, inpatient care, operation theatres, etc.), proportional time spent in each of these activities by the staff member will be used as an apportioning statistic for allocating their salaries towards these particular activities. The unit health system incurred per patient on specific treatment modalities (surgery) will be estimated. Further, health system cost on an outpatient visit in the department will be estimated along with the per bed day cost incurred on a patient in the inpatient ward following surgery.

## **References**

1. Stenberg K, Hanssen O, Bertram M, et al. 2019Guide posts for investment in primary health care and projected resource needs in 67 low-income and middle-income countries: a modelling study. Lancet Glob Health. 2019;7(11):e1500-e1510.
2. Home | Ayushman Bharat [Internet]. Pmjay.gov.in. 2021 [cited 3 January 2021]. Available from: <https://www.pmjay.gov.in/>
3. Home | Ayushman Bharat – Health and Wellness Centres [Internet]. ab-hwc.nhp.gov.in. 2021 [cited 19 January 2021]. Available from: <https://ab-hwc.nhp.gov.in/>
4. Home |Morbidity, Health Seeking Behaviour and Out of Pocket Expenditure Among Larger States Of India [Internet]. niti.gov.in. 2021 [cited 19 January 2021]. Available from: <https://niti.gov.in/morbidity-health-seeking-behaviour-and-out-pocket-expenditure-among-larger-states-india>

## **Budget**

|  |  |
| --- | --- |
| **Expenditure/ Description** | **Total cost in USD** |
| **1. Human Resources** | 21,960 |
| **2. Travel & Transportation** | 8,100 |
| **3. Other Direct Costs** | 525 |
| **4. Total** | 30,585 |

**Remuneration**

The entire fee/compensation, not exceeding USD 30,585 inclusive of all applicable taxes would be paid in below tranches to the account mentioned above held by the Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh.

**Deliverables and Payment**

|  |  |  |
| --- | --- | --- |
| **Activity/Deliverable** | **Timeline** | **Percentage of Payment** |
| Submission of Inception Report | September 2021 | 25% |
| Progress Report (Mid Term Update) | October 2021 | 25% |
| Submission of Research Data | November 2021 | 25% |
| Submission of Final Report | November 2021 | 25% |
| Submission of Policy Brief | November 2021 |  |

**Term of Contract**

This contract period is from **September 15, 2021** to **November 30, 2021.**  Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh will be engaged under the agreement from the date of signing the contract till the date of closure as mentioned above**. The contract will be considered closed when the deliverable is received, and final report is submitted.**